

**ABSTRACT**

X-ray radiation is transmitted through and scattered from an object under inspection  
5 to detect weapons, narcotics, explosives or other contraband. Relatively fast scintillators are  
employed for faster X-ray detection efficiency and significantly improved image resolution.  
Detector design is improved by the use of optically adiabatic scintillators. Switching  
between photon-counting and photon integration modes reduces noise and significantly  
increases overall image quality.